BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGE CUT OFF FIG. 11

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

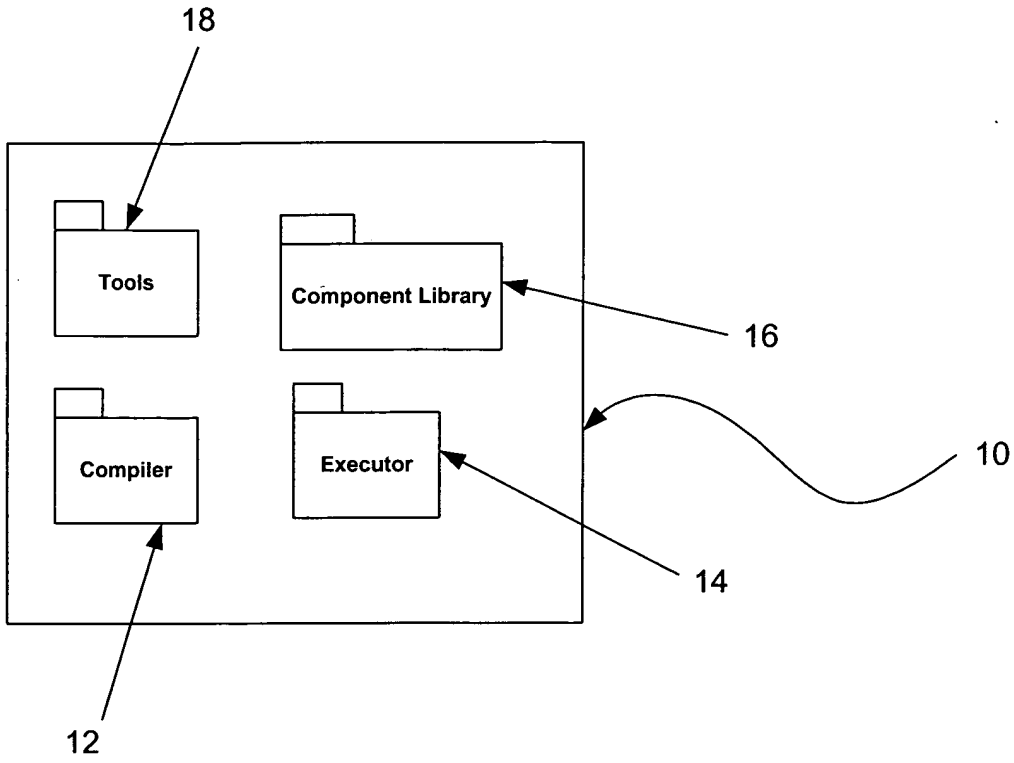


Fig. 1

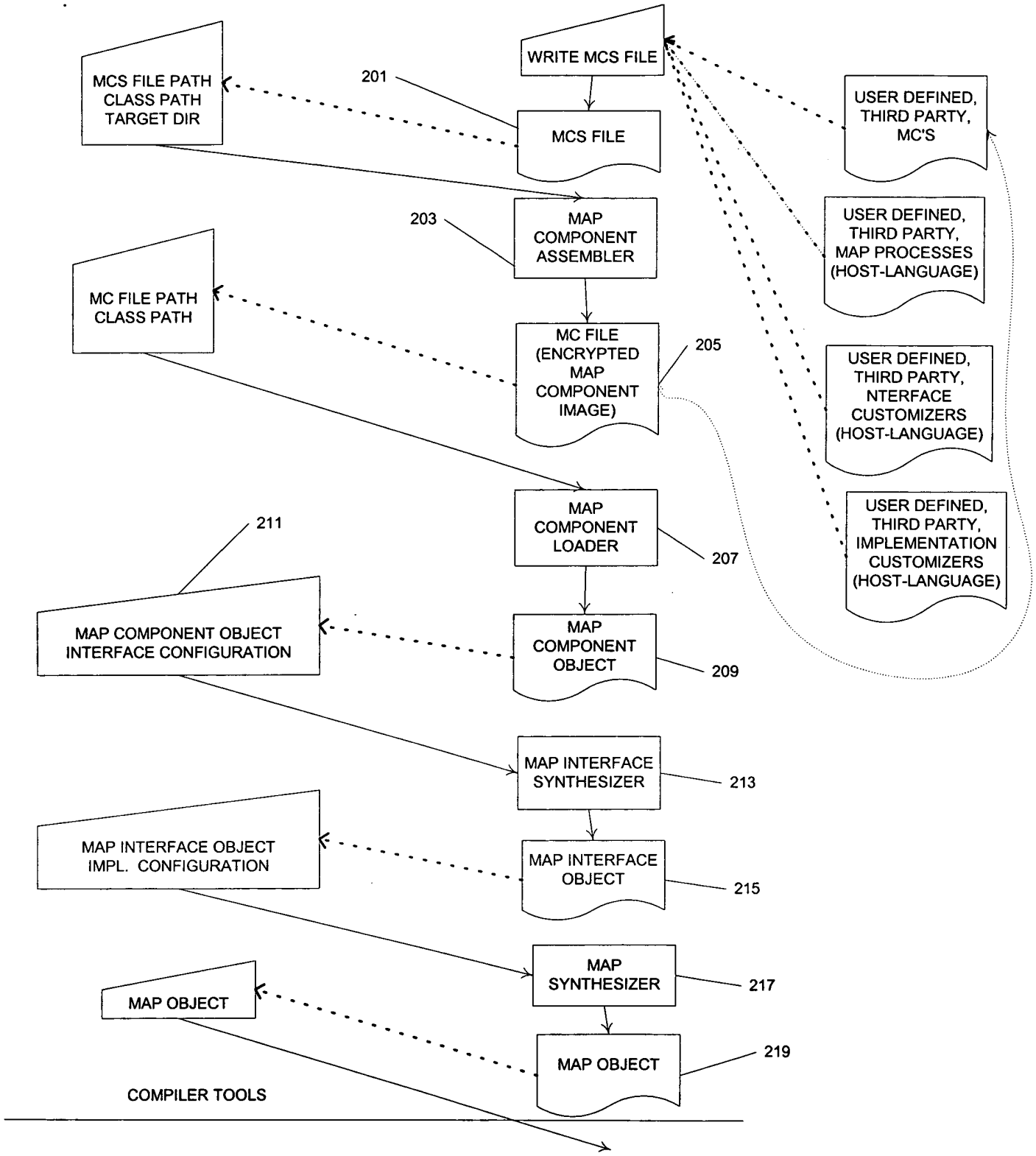

WRITE MCS FILE
MCS FILE PATH
CLASS PATH
TARGET DIR
201
MCS FILE
USER DEFINED,
THIRD PARTY,
MC'S
MAP
COMPONENT
ASSEMBLER
203
USER DEFINED,
THIRD PARTY,
MAP PROCESSES
(HOST-LANGUAGE)
MC FILE PATH
CLASS PATH
MC FILE
(ENCRYPTED
MAP
COMPONENT
IMAGE)
205
USER DEFINED,
THIRD PARTY,
NTERFACE
CUSTOMIZERS
(HOST-LANGUAGE)
MAP
COMPONENT
LOADER
207
USER DEFINED,
THIRD PARTY,
IMPLEMENTATION
CUSTOMIZERS
(HOST-LANGUAGE)
211
MAP COMPONENT OBJECT
INTERFACE CONFIGURATION
MAP
COMPONENT
OBJECT
209
MAP INTERFACE
SYNTHESIZER
213
MAP INTERFACE OBJECT
IMPL. CONFIGURATION
MAP INTERFACE
OBJECT
215
MAP
SYNTHESIZER
217
MAP OBJECT
MAP OBJECT
219
COMPILER TOOLS

Fig. 2A

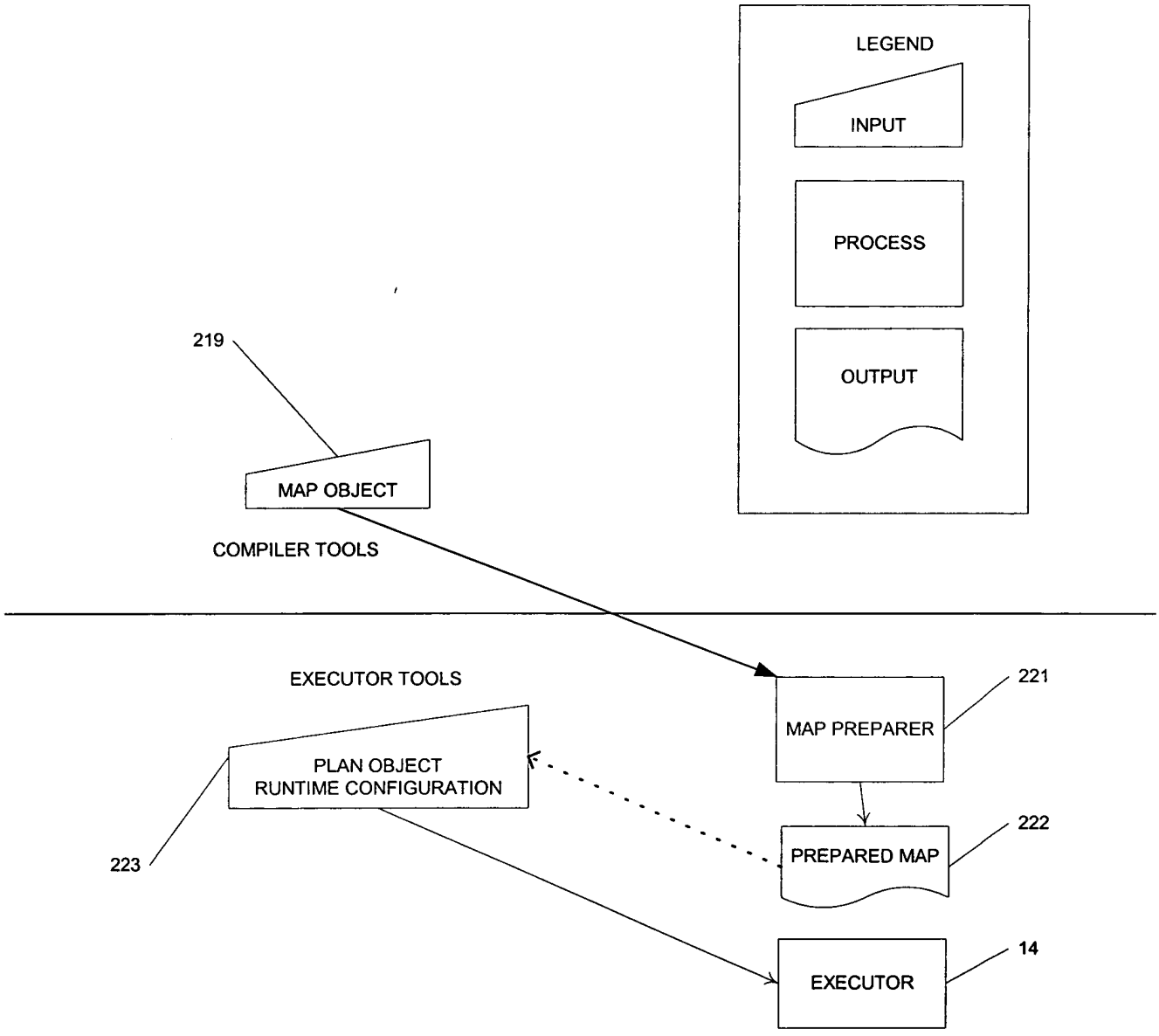

LEGEND
INPUT
PROCESS
OUTPUT
219
MAP OBJECT
COMPILER TOOLS
EXECUTOR TOOLS
221
MAP PREPARER
PLAN OBJECT
RUNTIME CONFIGURATION
223
222
PREPARED MAP
14
EXECUTOR

Fig. 2B

MAP COMPONENT SOURCE CREATION

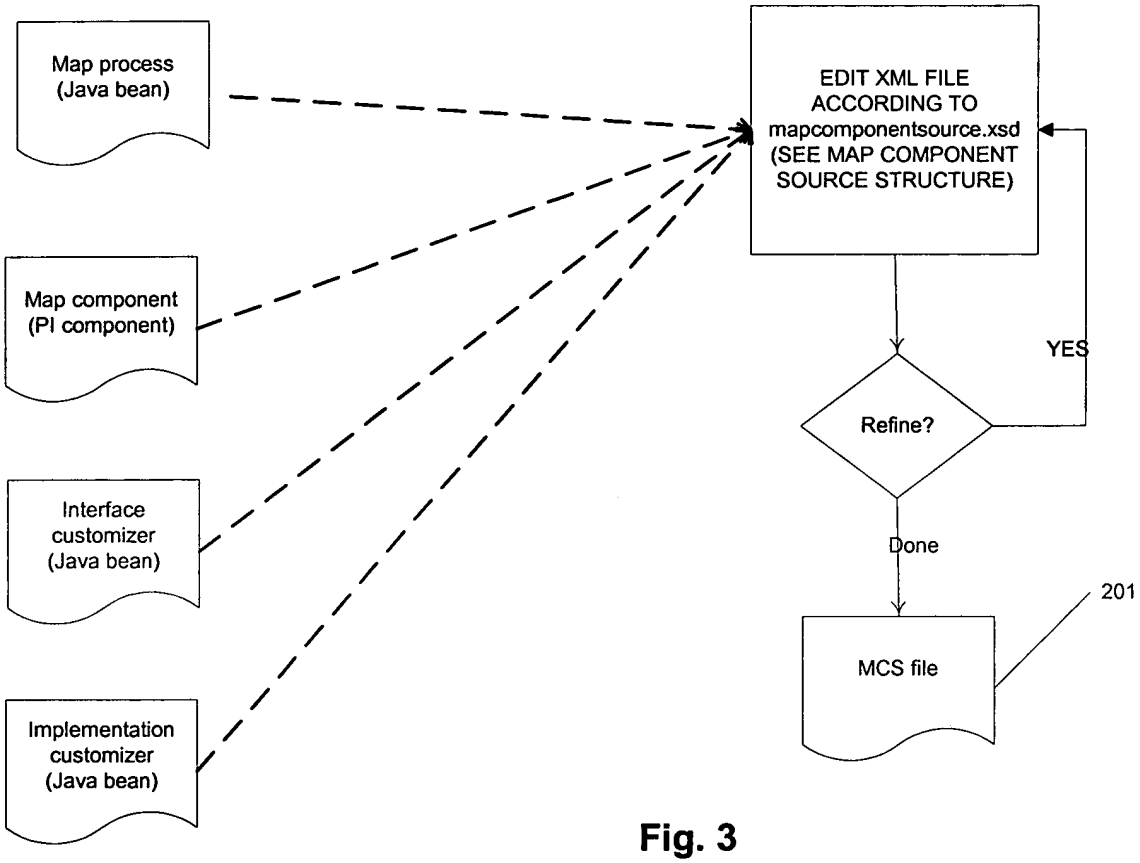
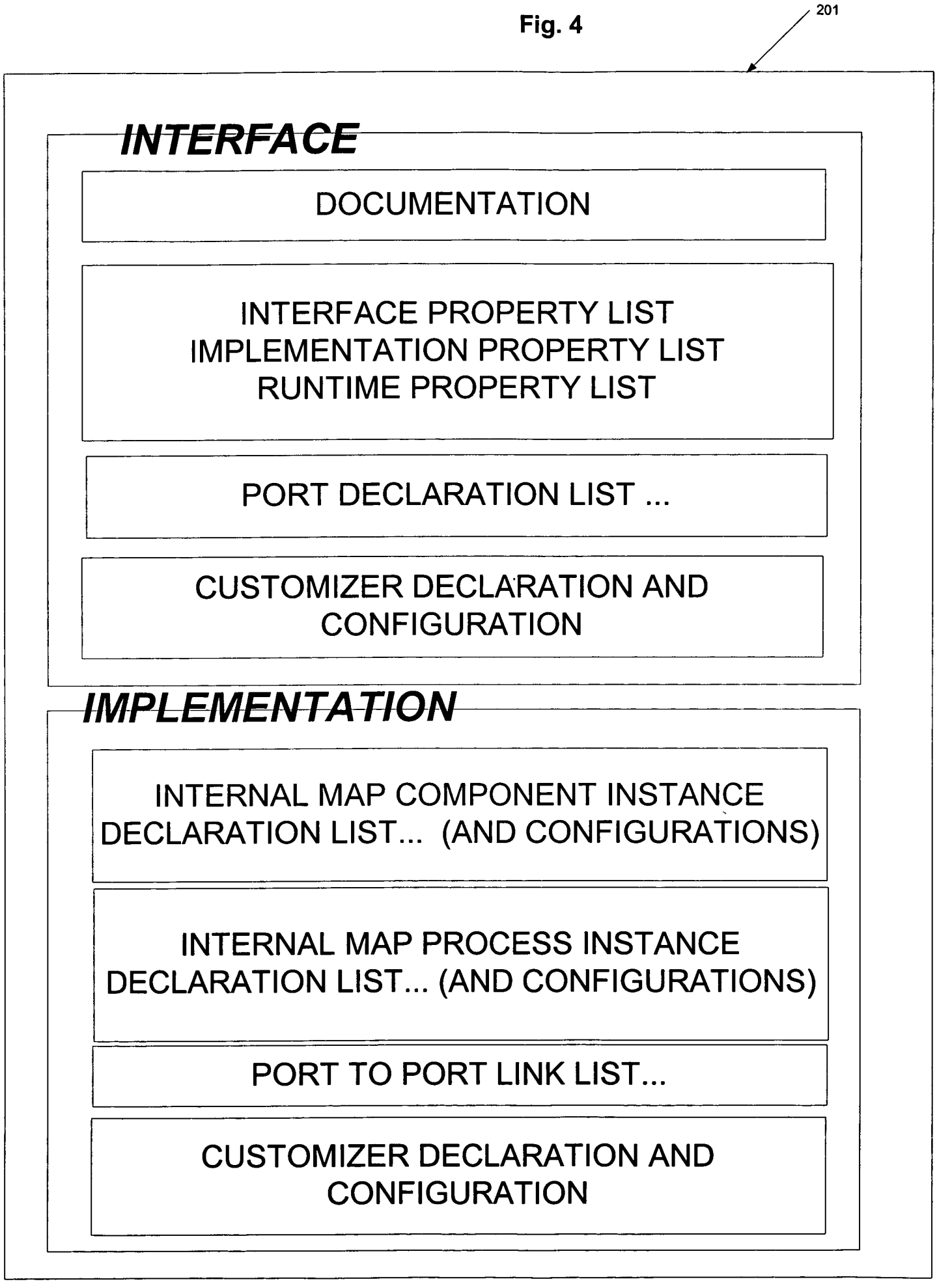


Fig. 3

Fig. 4


201
INTERFACE
DOCUMENTATION
INTERFACE PROPERTY LIST
IMPLEMENTATION PROPERTY LIST
RUNTIME PROPERTY LIST
PORT DECLARATION LIST ...
CUSTOMIZER DECLARATION AND CONFIGURATION
IMPLEMENTATION
INTERNAL MAP COMPONENT INSTANCE DECLARATION LIST... (AND CONFIGURATIONS)
INTERNAL MAP PROCESS INSTANCE DECLARATION LIST... (AND CONFIGURATIONS)
PORT TO PORT LINK LIST...
CUSTOMIZER DECLARATION AND CONFIGURATION

MAP COMPONENT ASSEMBLY PROCESS

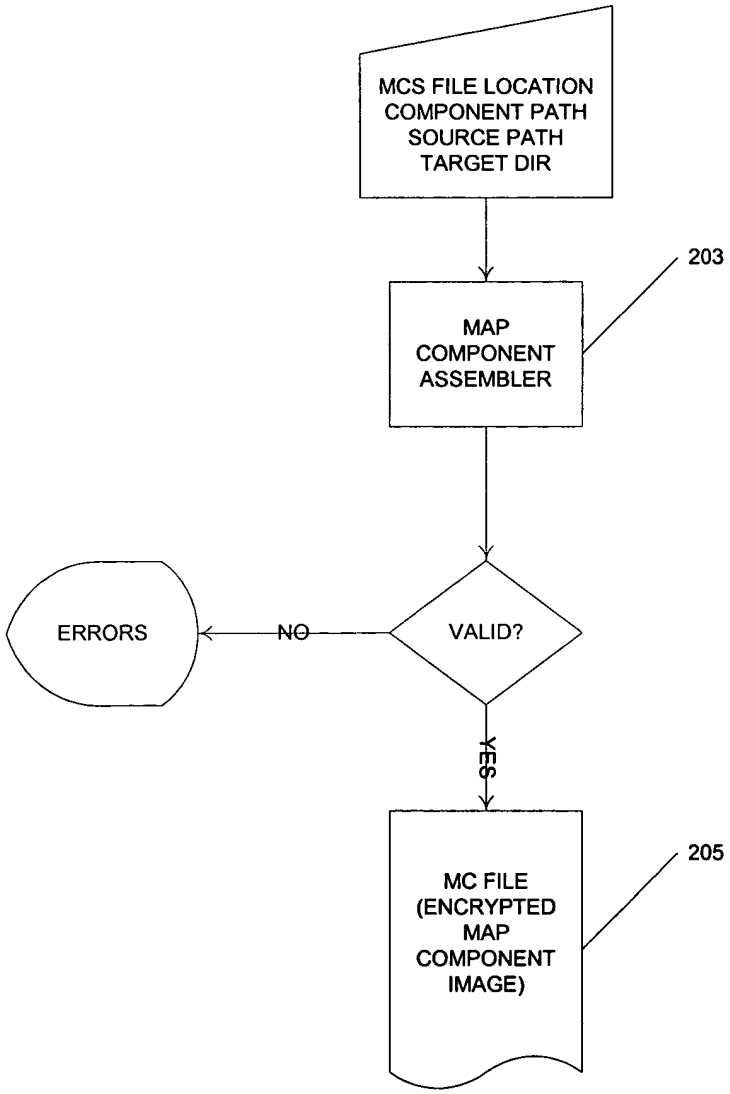


Fig. 5

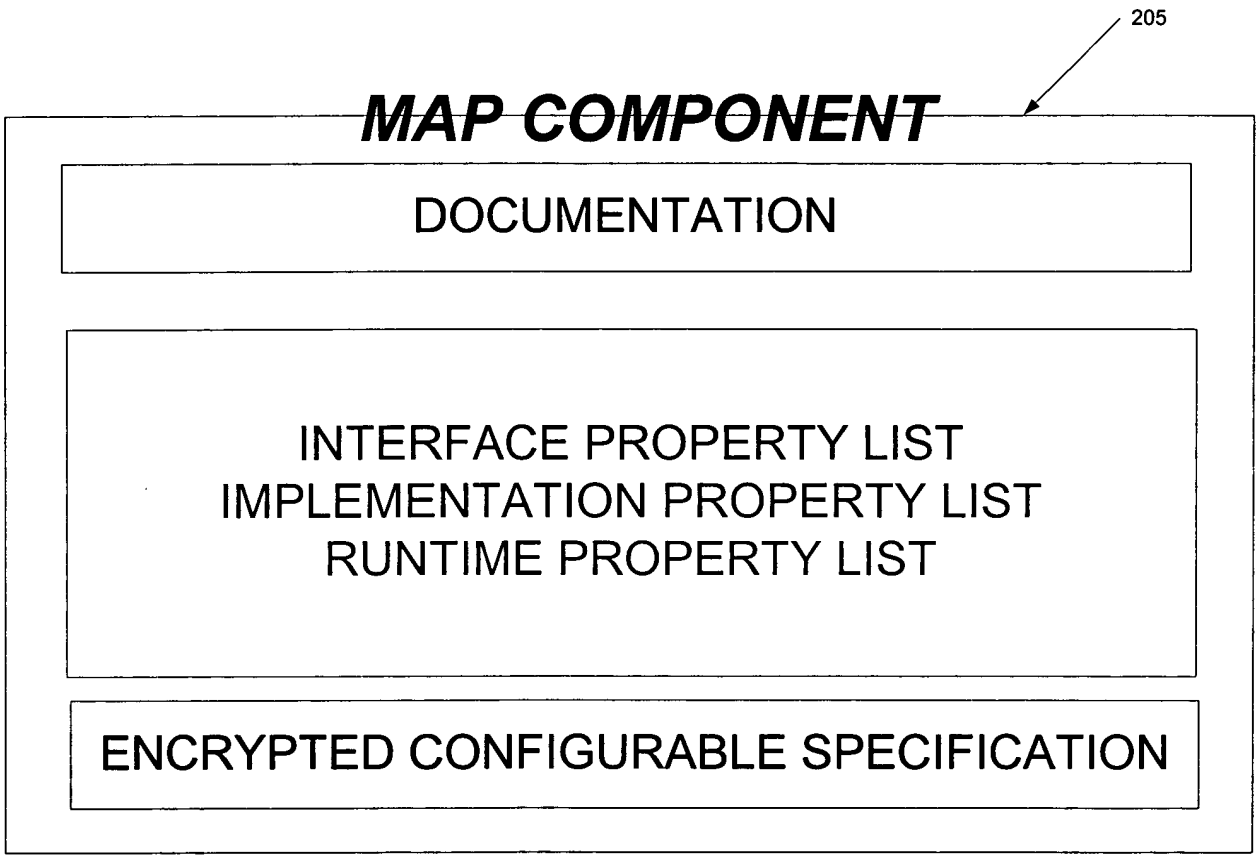

205
MAP COMPONENT
DOCUMENTATION
INTERFACE PROPERTY LIST
IMPLEMENTATION PROPERTY LIST
RUNTIME PROPERTY LIST
ENCRYPTED CONFIGURABLE SPECIFICATION

Fig. 6

MAP COMPONENT LOADING

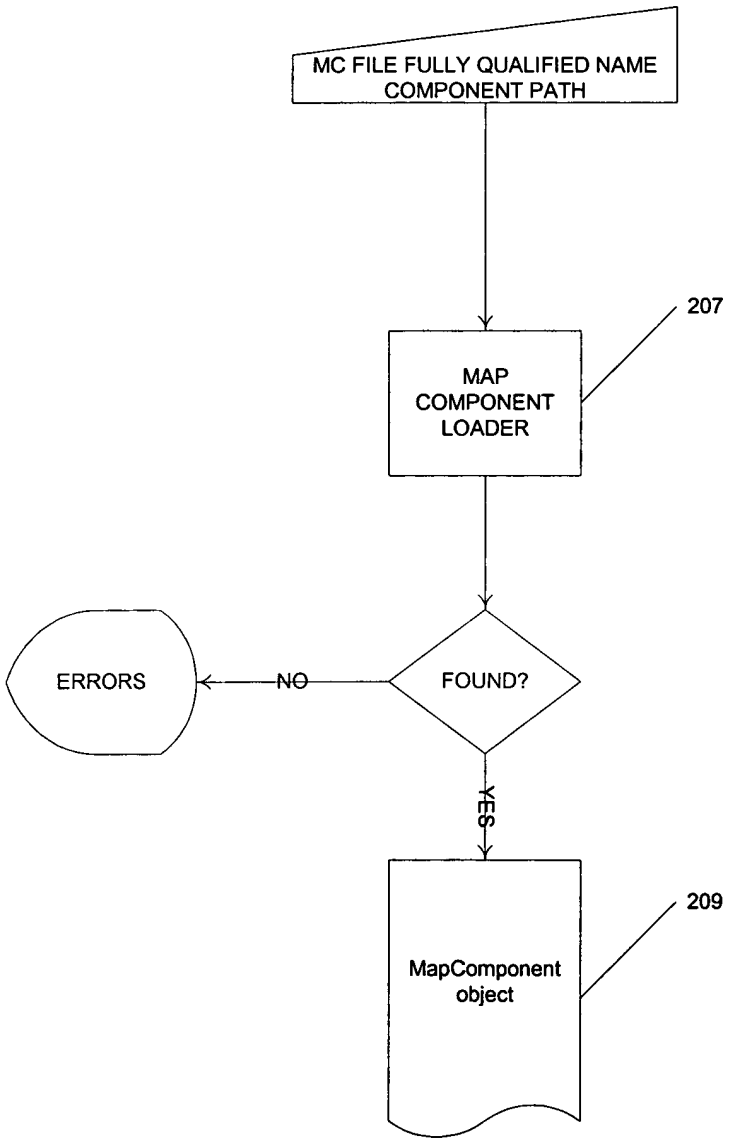


Fig. 7

MAP INTERFACE SYNTHESIS

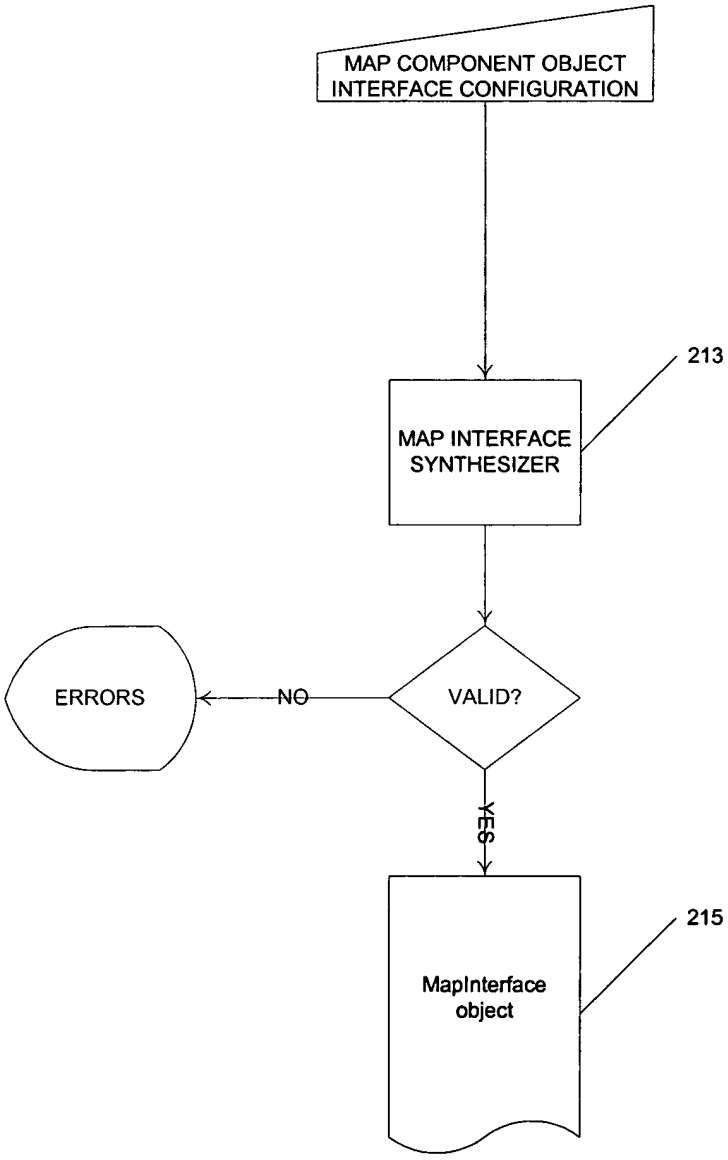


Fig. 8

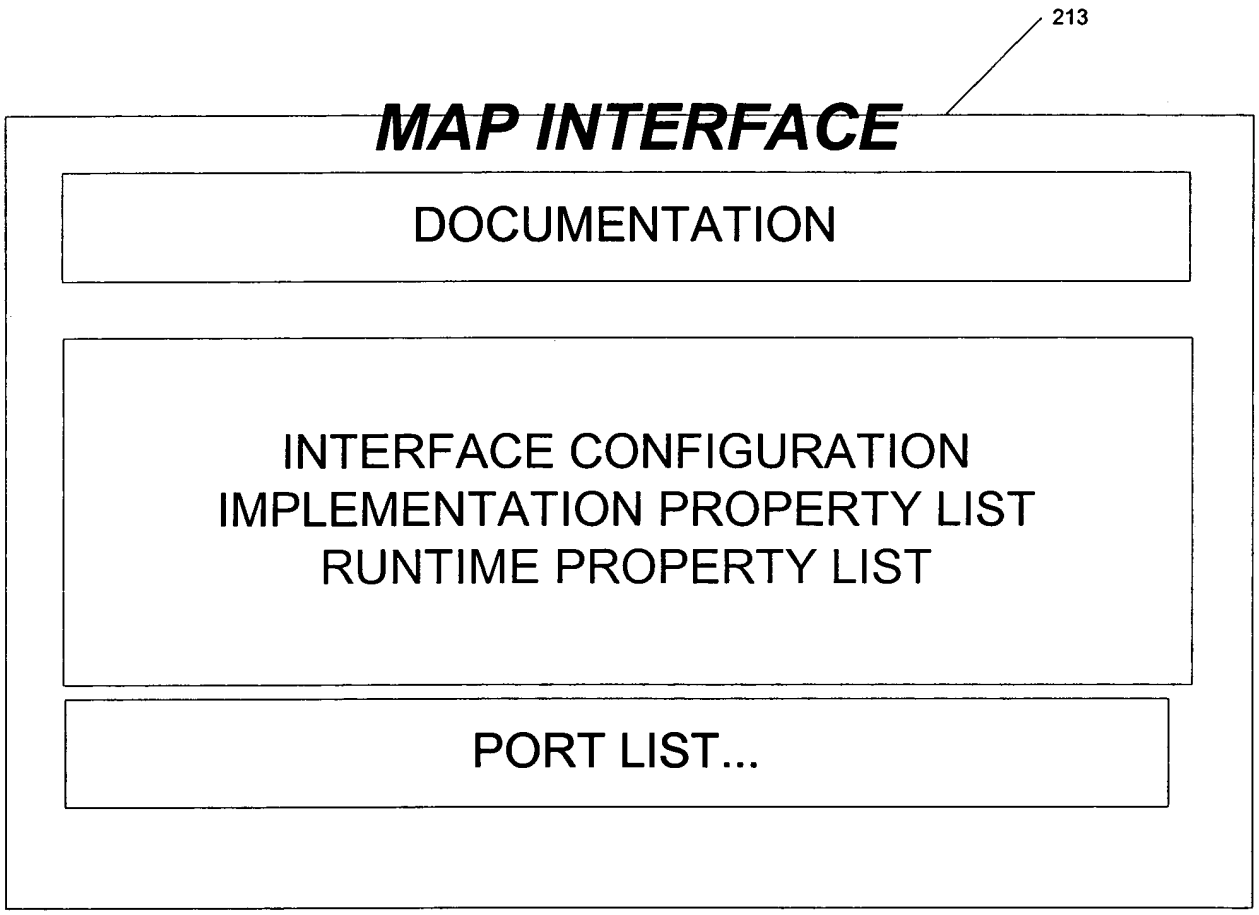

213
MAP INTERFACE
DOCUMENTATION
INTERFACE CONFIGURATION
IMPLEMENTATION PROPERTY LIST
RUNTIME PROPERTY LIST
PORT LIST...

Fig. 9

MAP SYNTHESIS

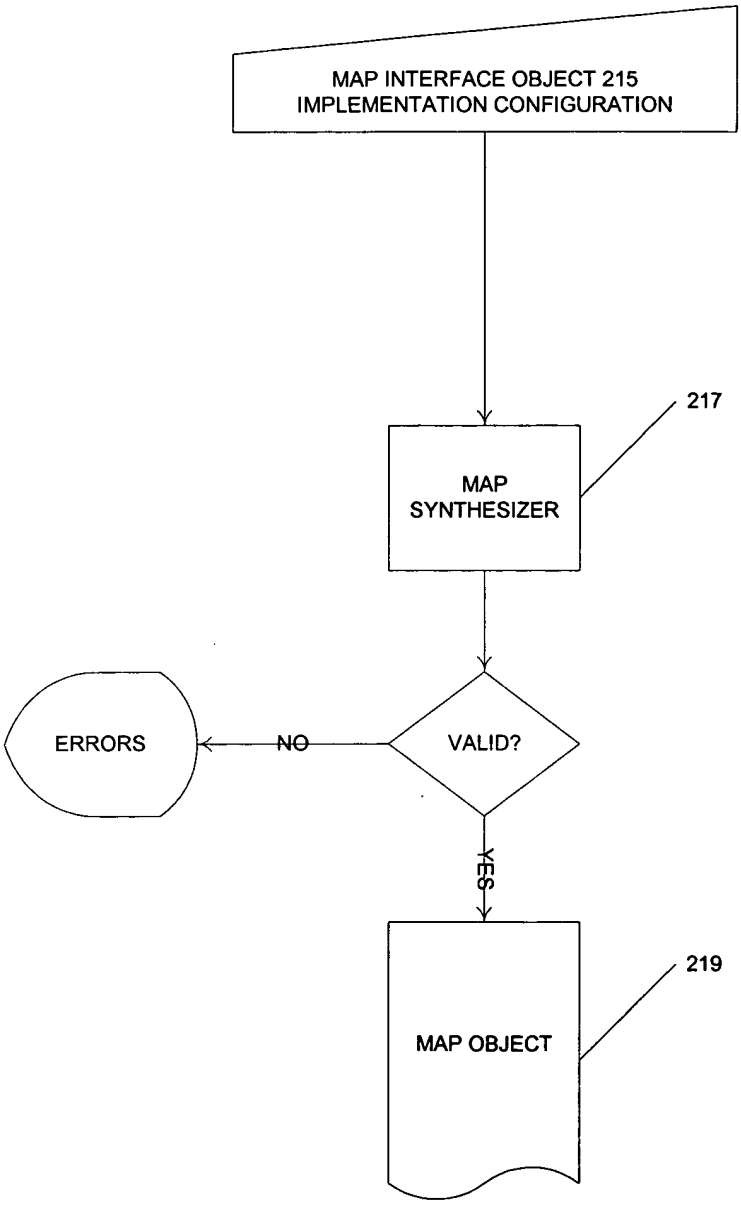


Fig. 10

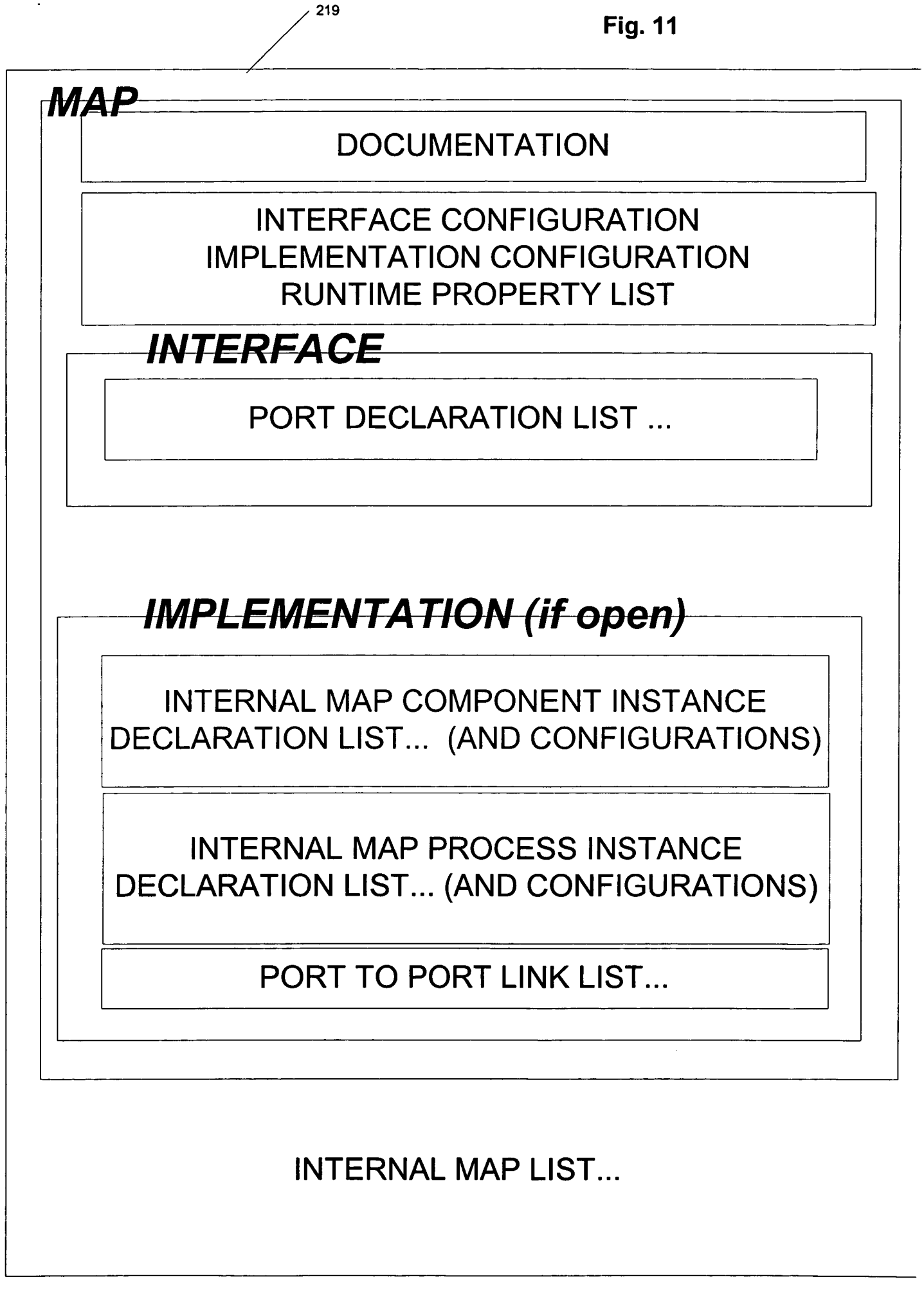
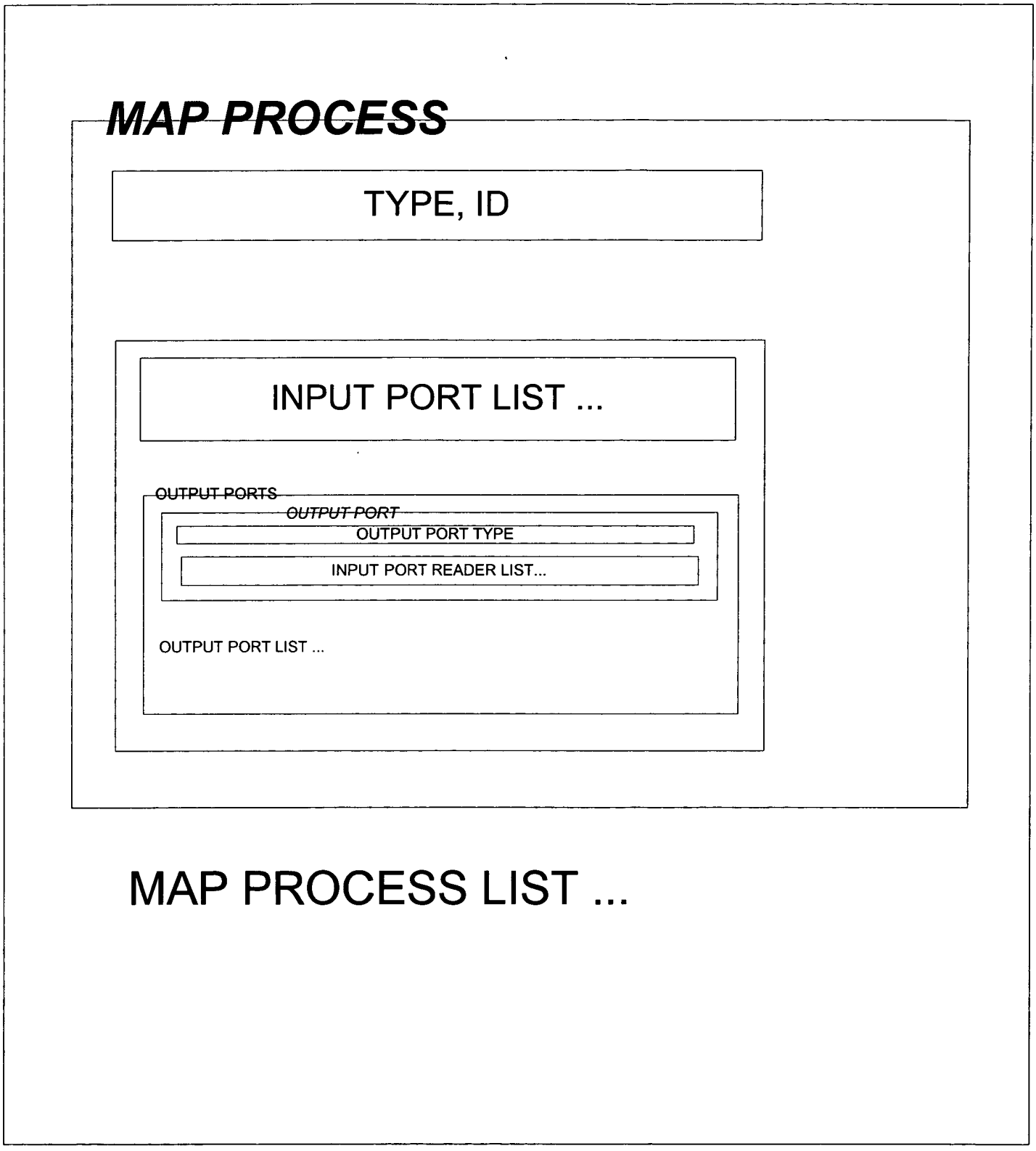

219
MAP
DOCUMENTATION
INTERFACE CONFIGURATION
IMPLEMENTATION CONFIGURATION
RUNTIME PROPERTY LIST
INTERFACE
PORT DECLARATION LIST ...
IMPLEMENTATION (if open)
INTERNAL MAP COMPONENT INSTANCE DECLARATION LIST... (AND CONFIGURATIONS)
INTERNAL MAP PROCESS INSTANCE DECLARATION LIST... (AND CONFIGURATIONS)
PORT TO PORT LINK LIST...
INTERNAL MAP LIST...

Fig. 11

Fig. 12


MAP PROCESS
TYPE, ID
INPUT PORT LIST ...
OUTPUT PORTS
OUTPUT PORT
OUTPUT PORT TYPE
INPUT PORT READER LIST...
OUTPUT PORT LIST ...
MAP PROCESS LIST ...

MAP PREPARATION

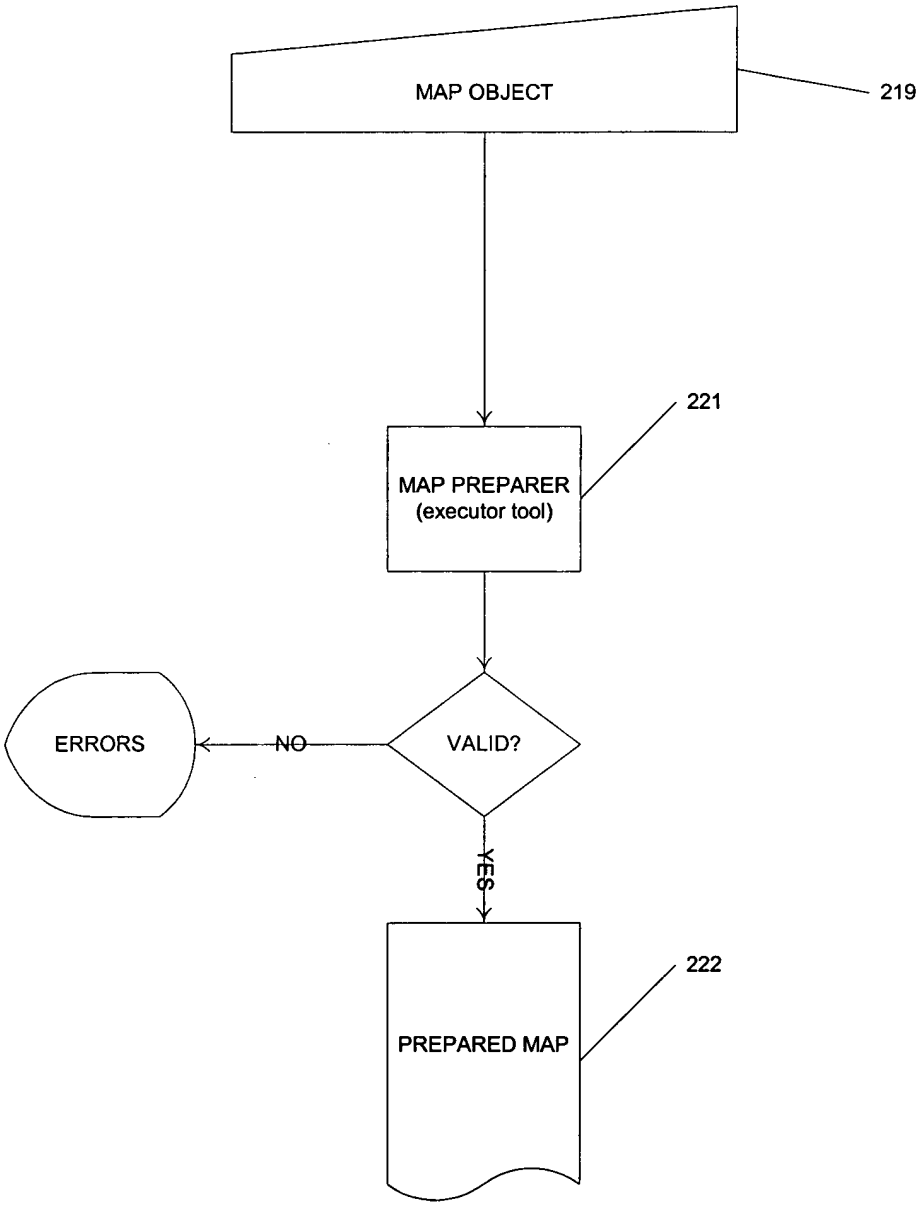


Fig. 13

PREPARED MAP EXECUTION

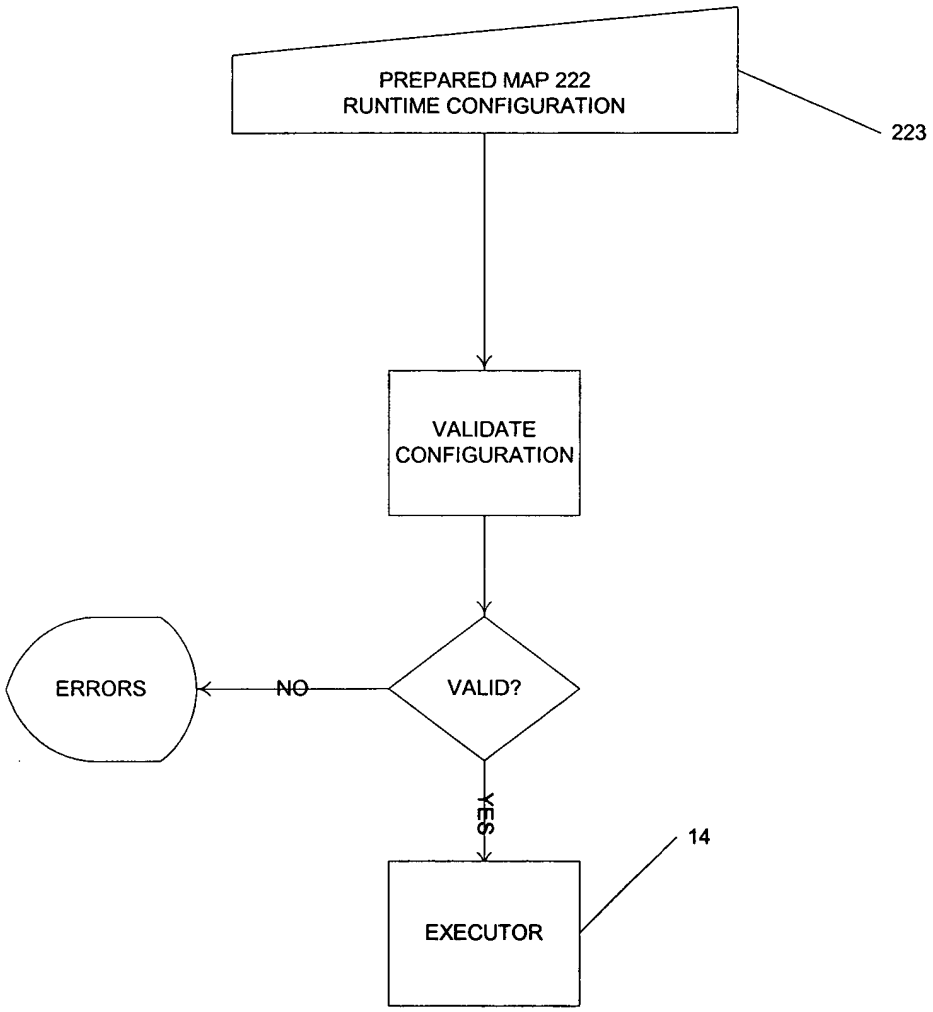


Fig. 14

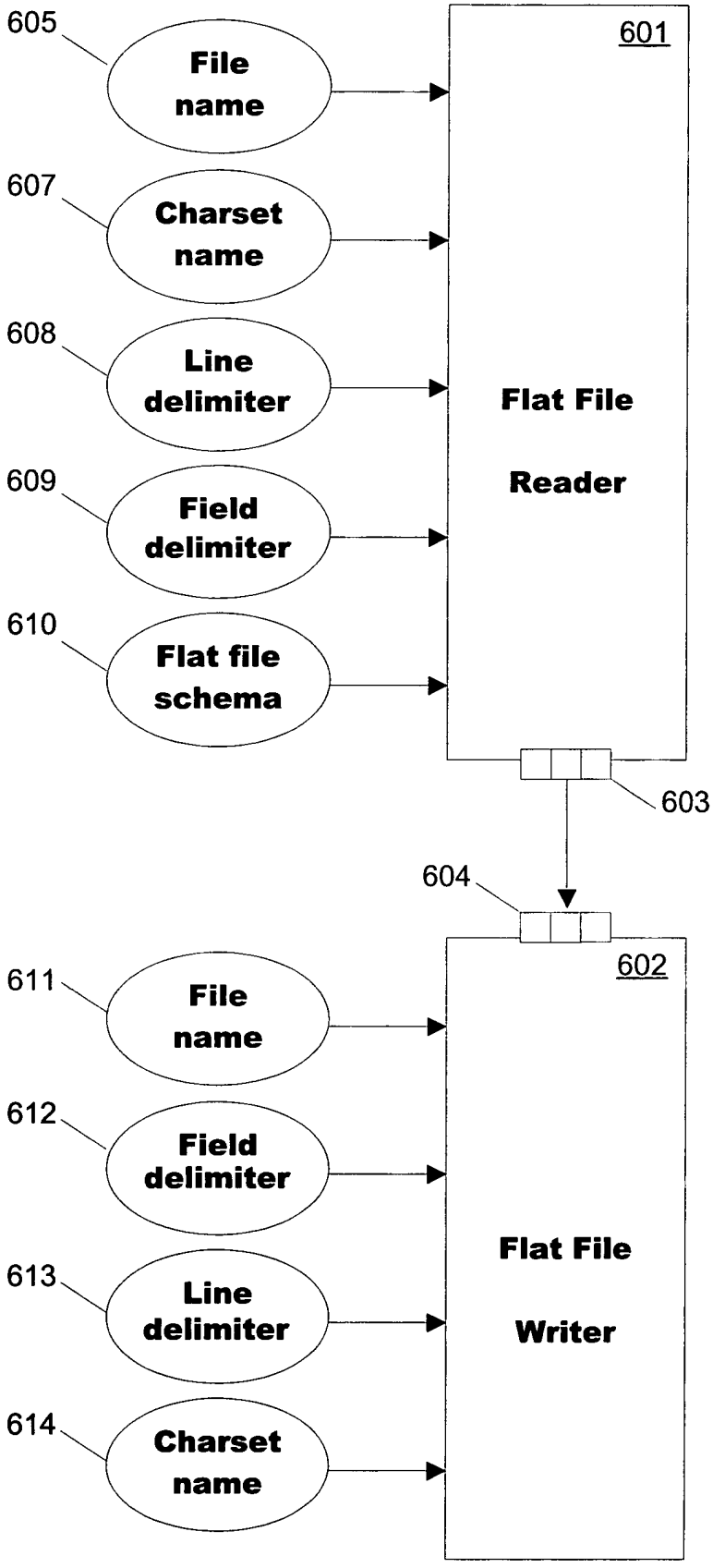

605
File name
607
Charset name
608
Line delimiter
609
Field delimiter
610
Flat file schema
601
Flat File Reader
603
604
602
611
File name
612
Field delimiter
613
Line delimiter
614
Charset name
Flat File Writer

Fig. 15

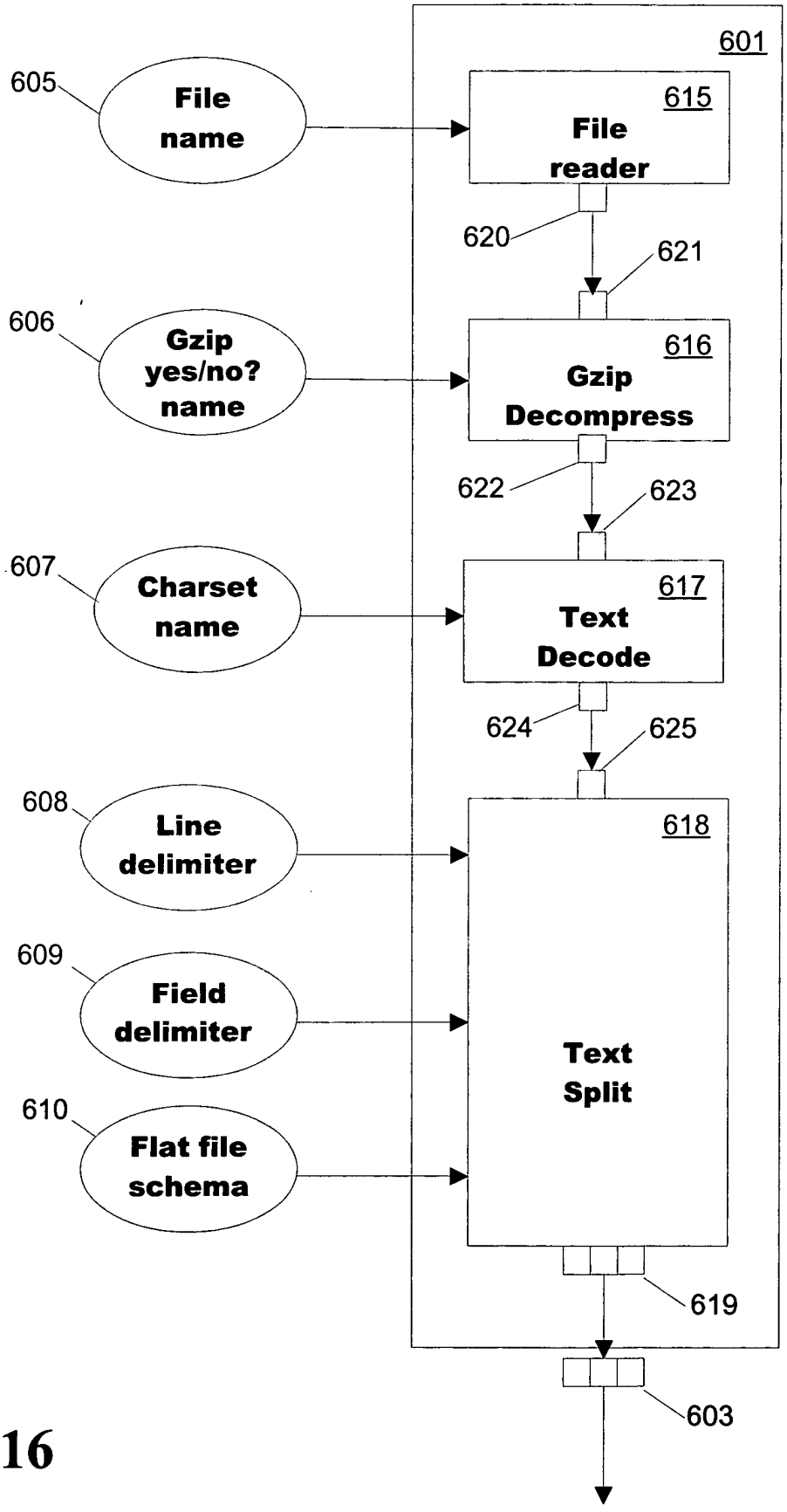

601
605
File name
615
File reader
620
621
606
Gzip yes/no? name
616
Gzip Decompress
622
623
607
Charset name
617
Text Decode
624
625
608
Line delimiter
618
609
Field delimiter
Text Split
610
Flat file schema
619
603

Fig. 16

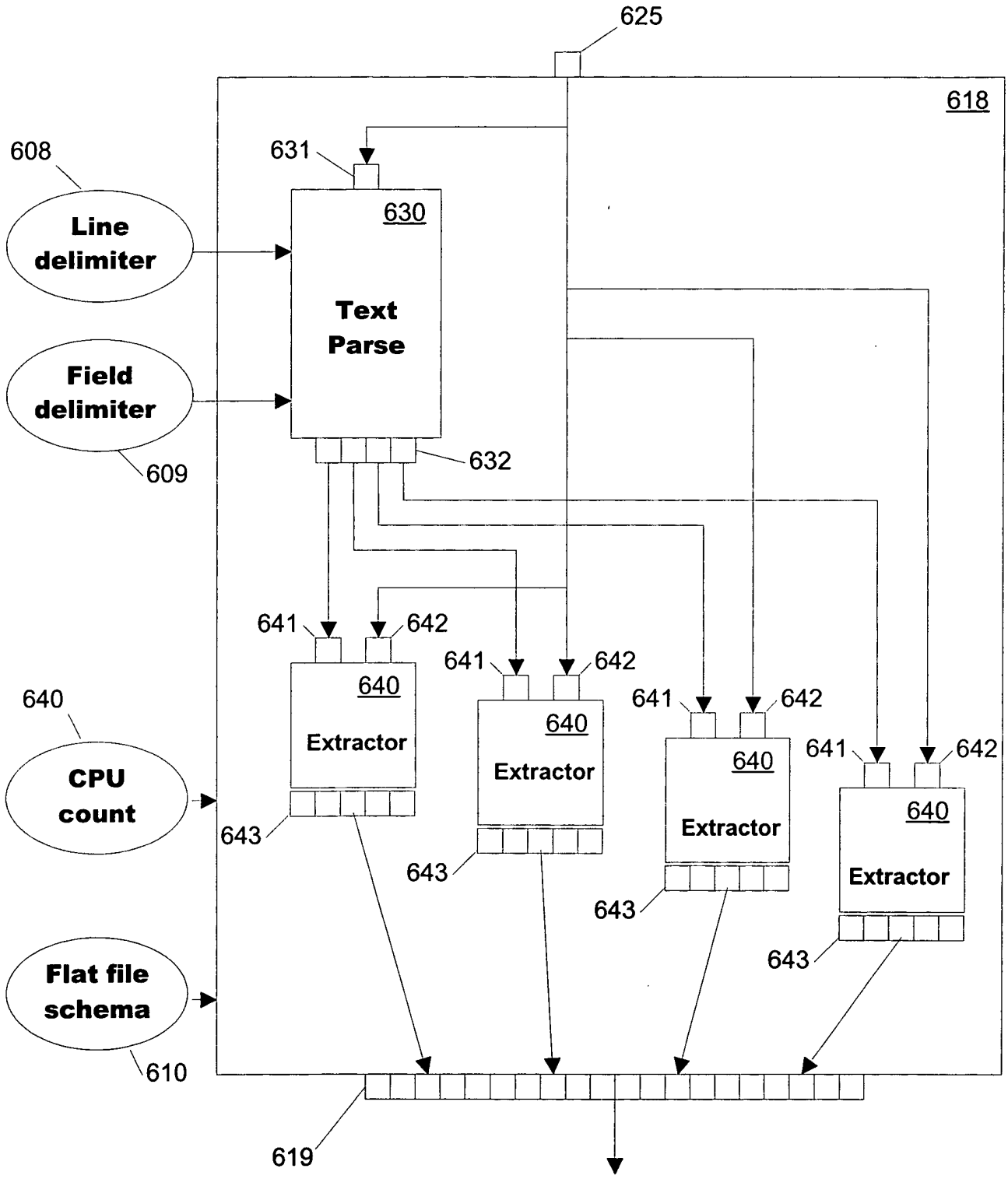
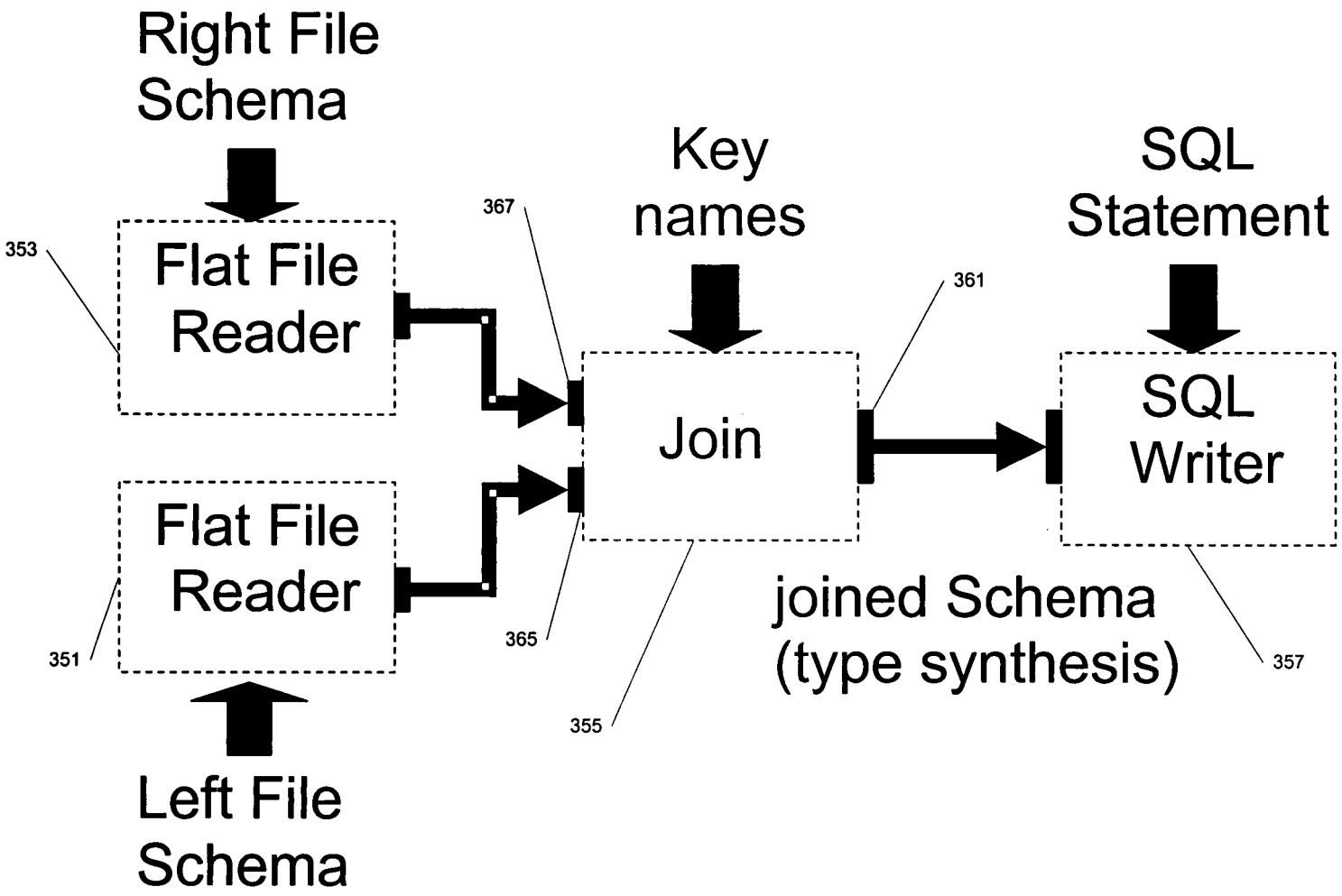

625
618
608
631
630
Line delimiter
Text Parse
Field delimiter
609
632
641
642
640
Extractor
643
640
CPU count
Flat file schema
610
619

Fig. 17



Join Example

Fig. 18

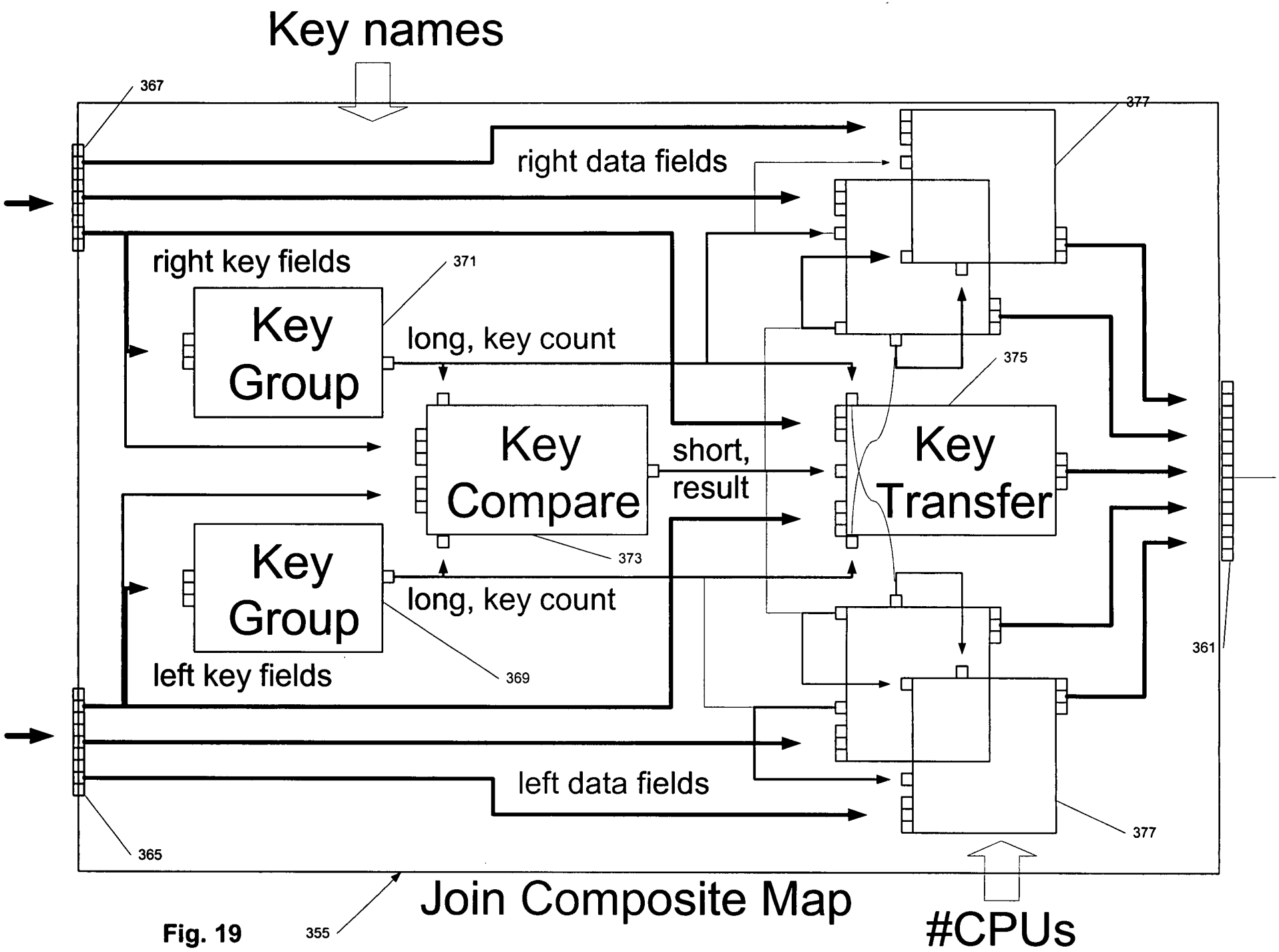
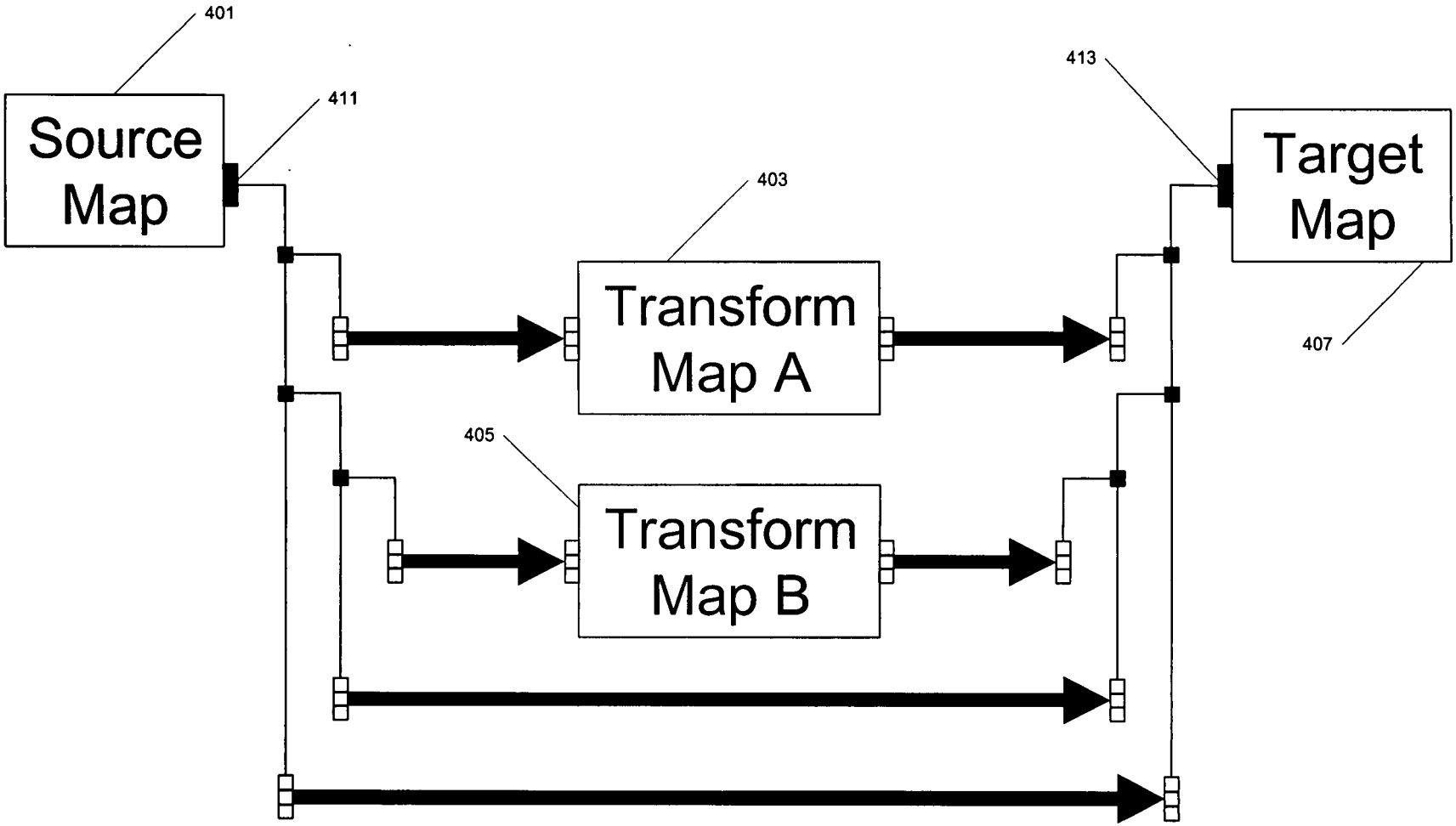

Key names
367
377
right data fields
right key fields
371
Key Group
long, key count
375
Key Compare
short, result
Key Transfer
373
Key Group
long, key count
361
left key fields
369
left data fields
377
365
Join Composite Map
355
#CPUs

Fig. 19



Hierarchical Composite Ports

Fig. 20

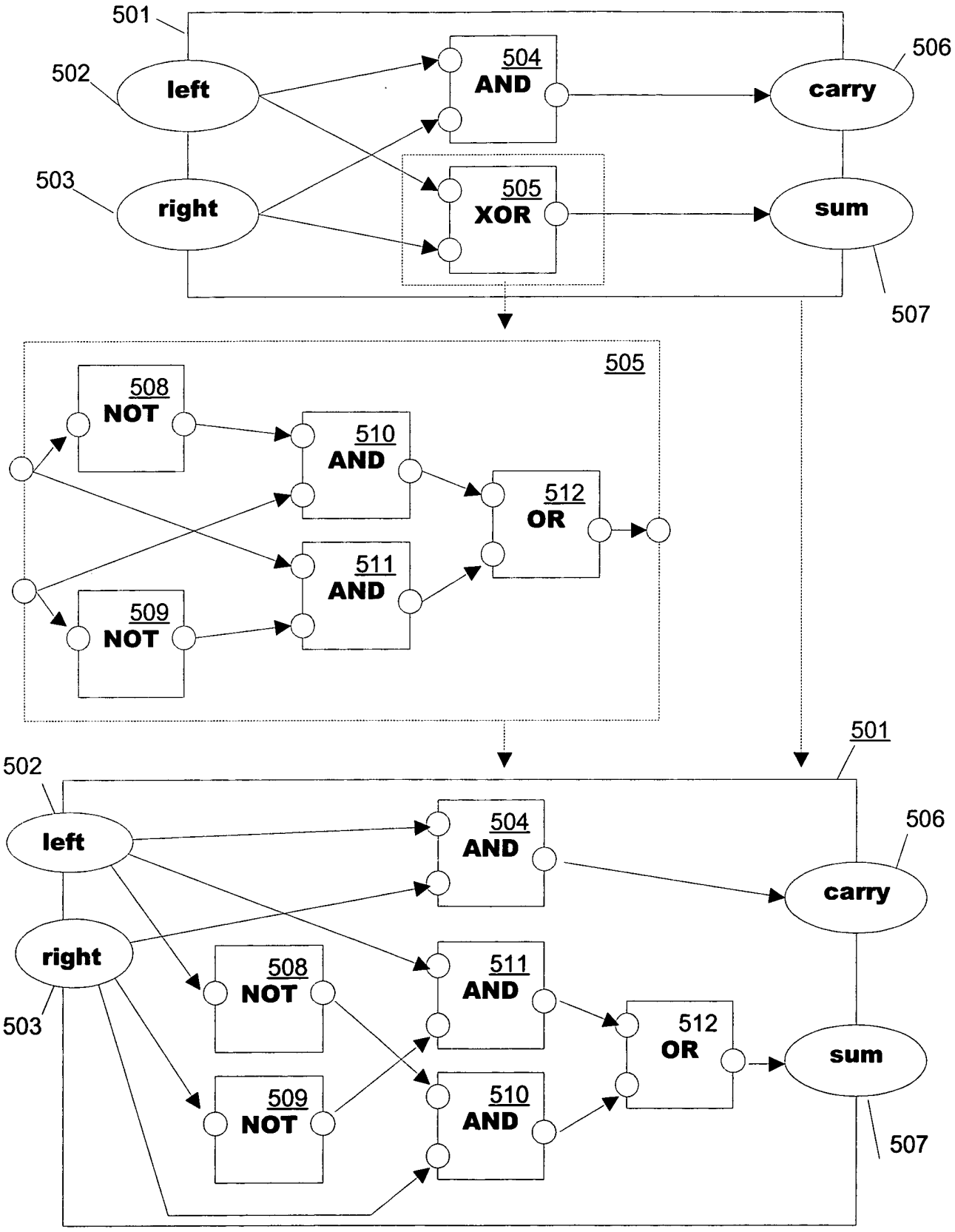

501
502
left
503
right
504
AND
505
XOR
506
carry
sum
507
505
508
NOT
509
NOT
510
AND
511
AND
512
OR
501
502
left
right
503
504
AND
505
XOR
506
carry
sum
507
508
NOT
509
NOT
510
AND
511
AND
512
OR

Fig. 21

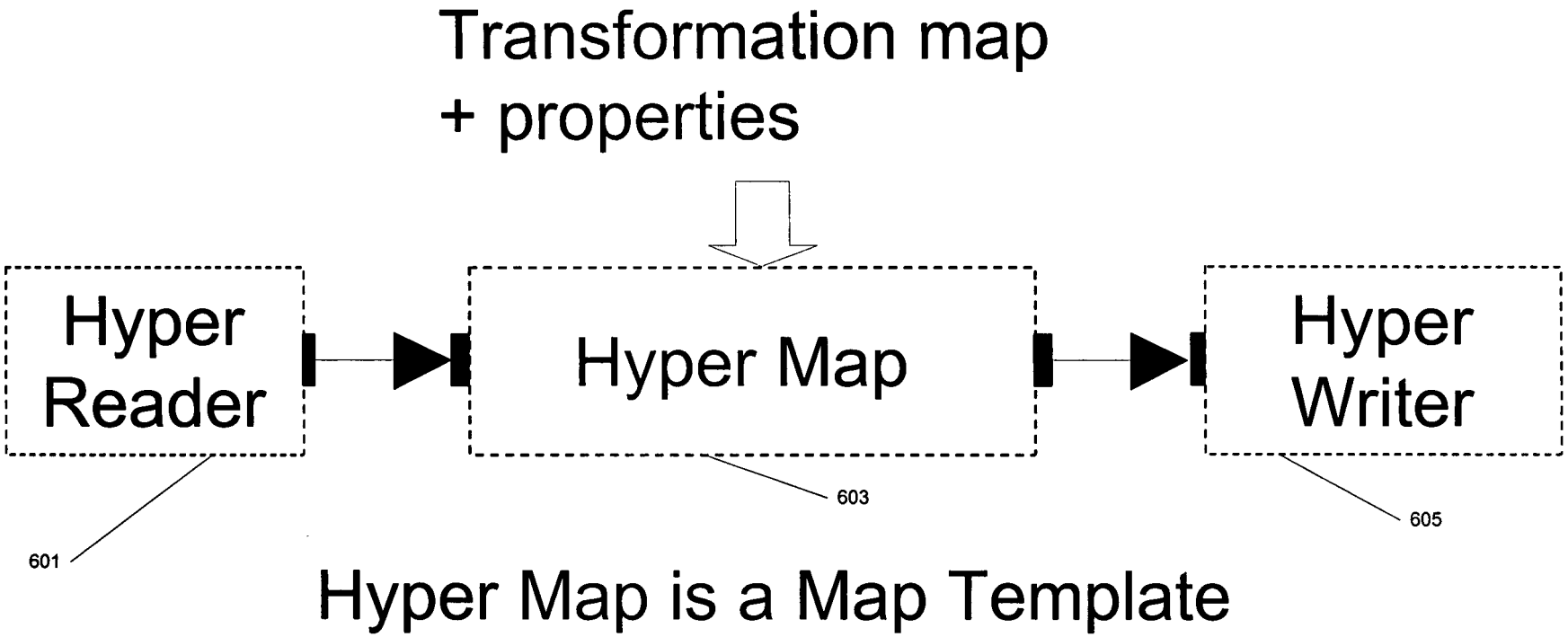

Transformation map
+ properties
Hyper Reader
Hyper Map
Hyper Writer
601
603
605
Hyper Map is a Map Template

Fig. 22

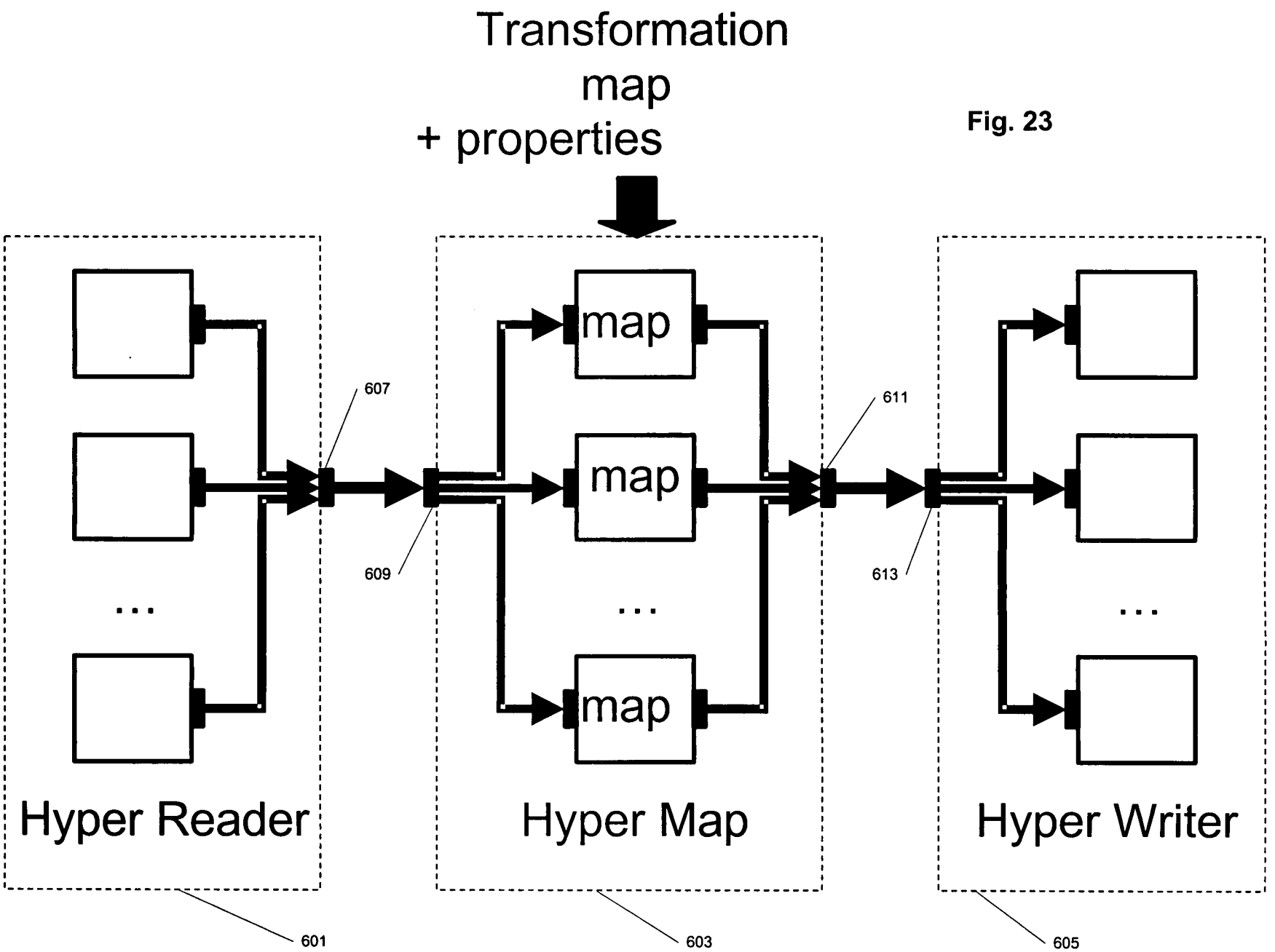
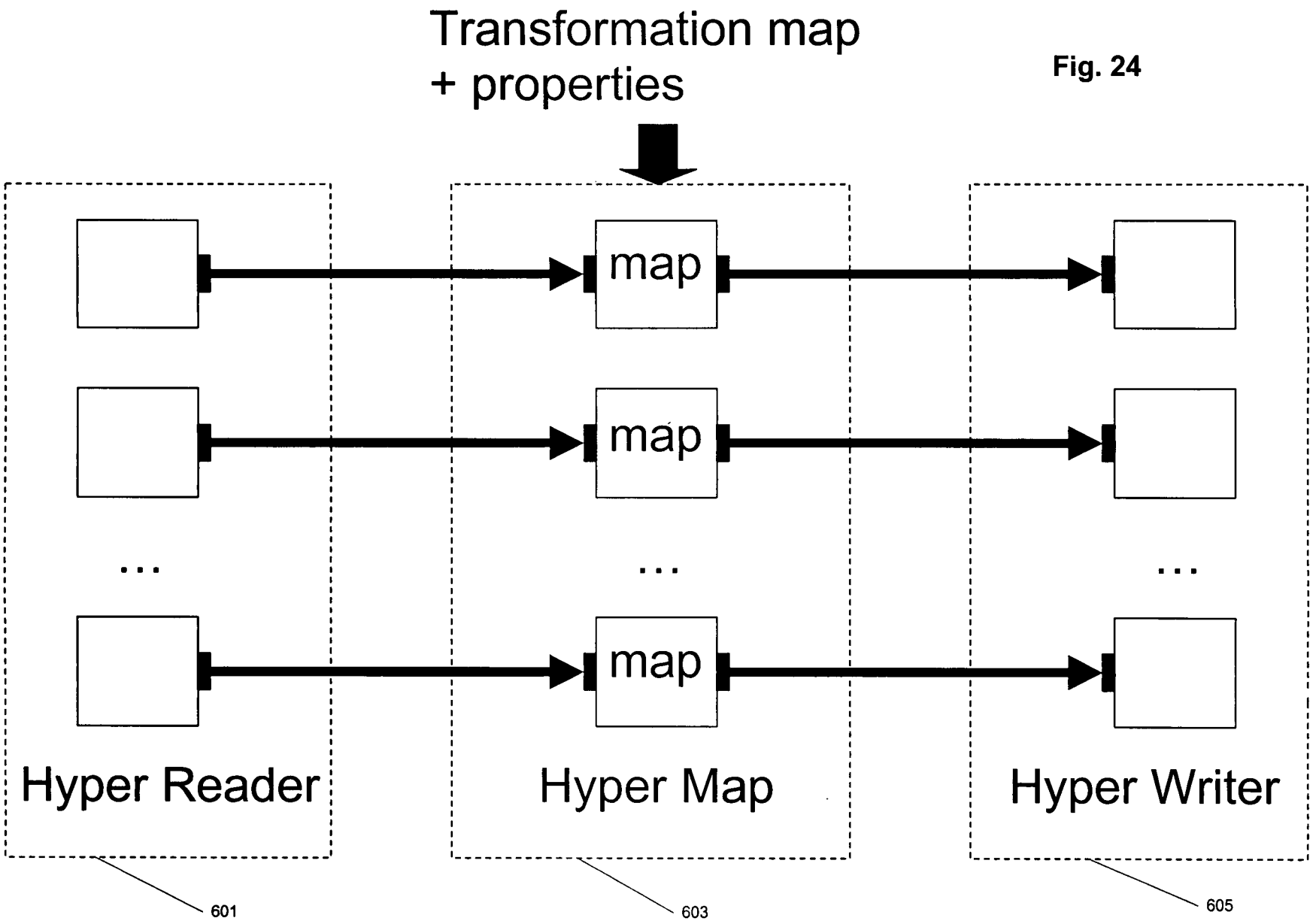


Fig. 23

Hyper Map Implements Partitioned Parallelism

Fig. 24


Transformation map
+ properties
map
map
map
Hyper Reader
Hyper Map
Hyper Writer
601
603
605
Synthesis Trims Composite Map Links

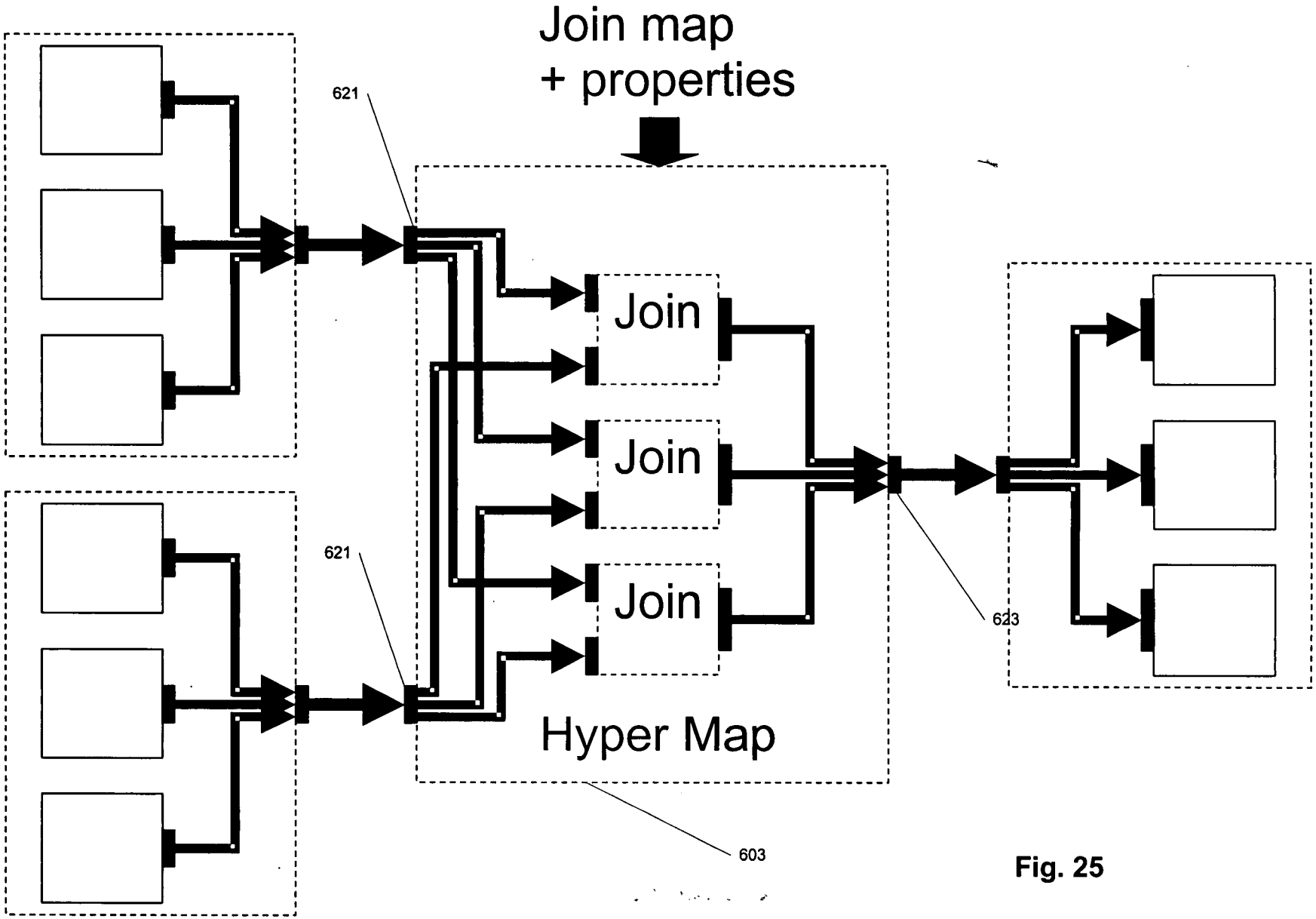


Fig. 25

Hyper Map Partitions another Map's Interface

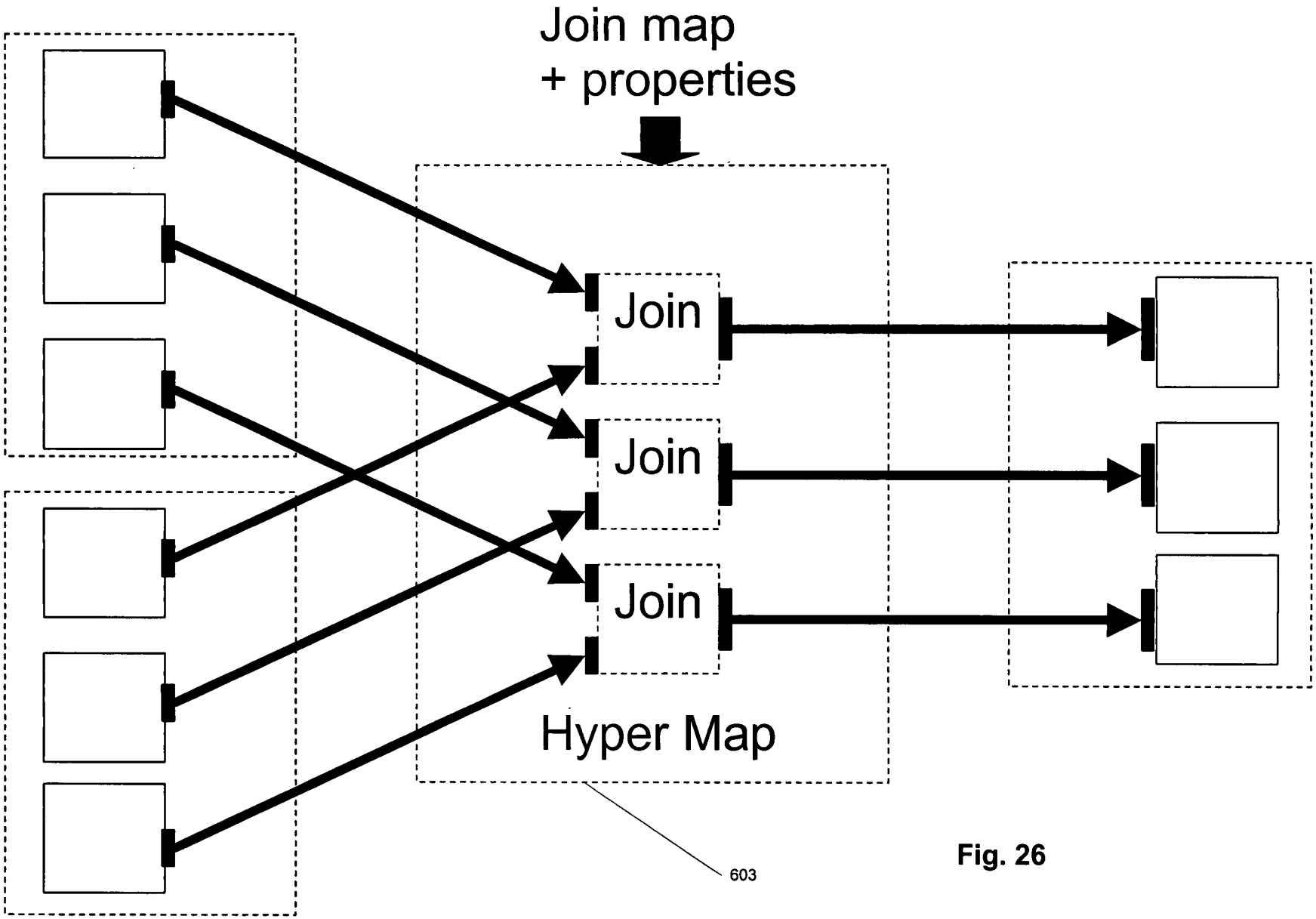
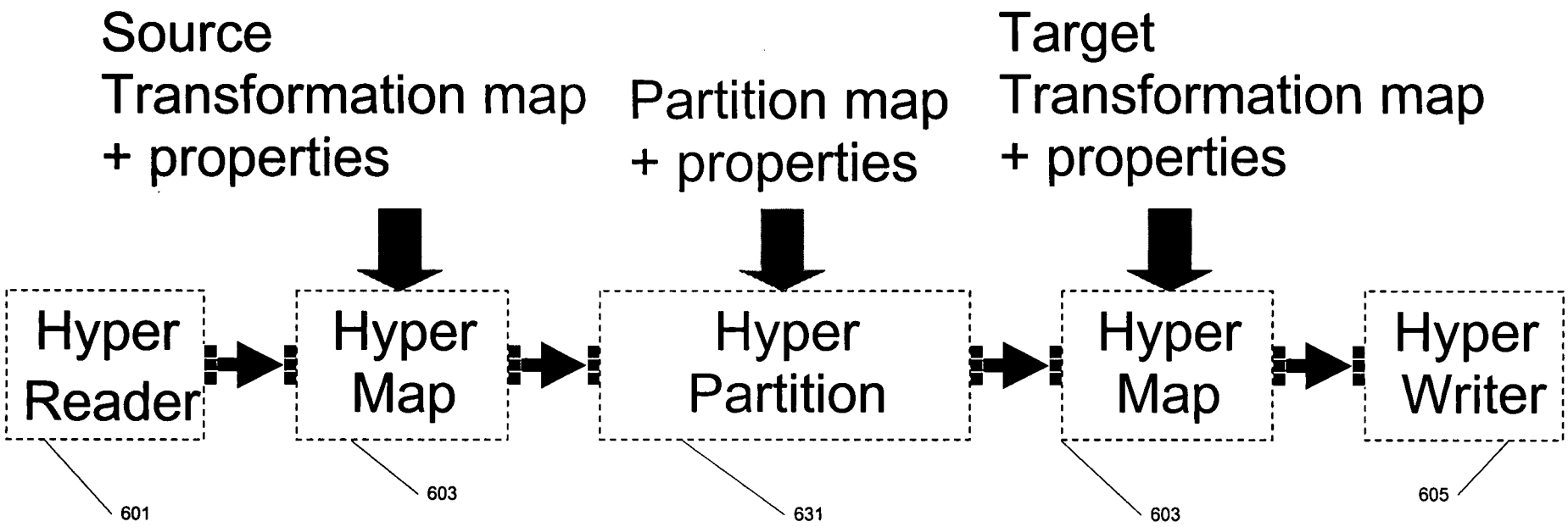


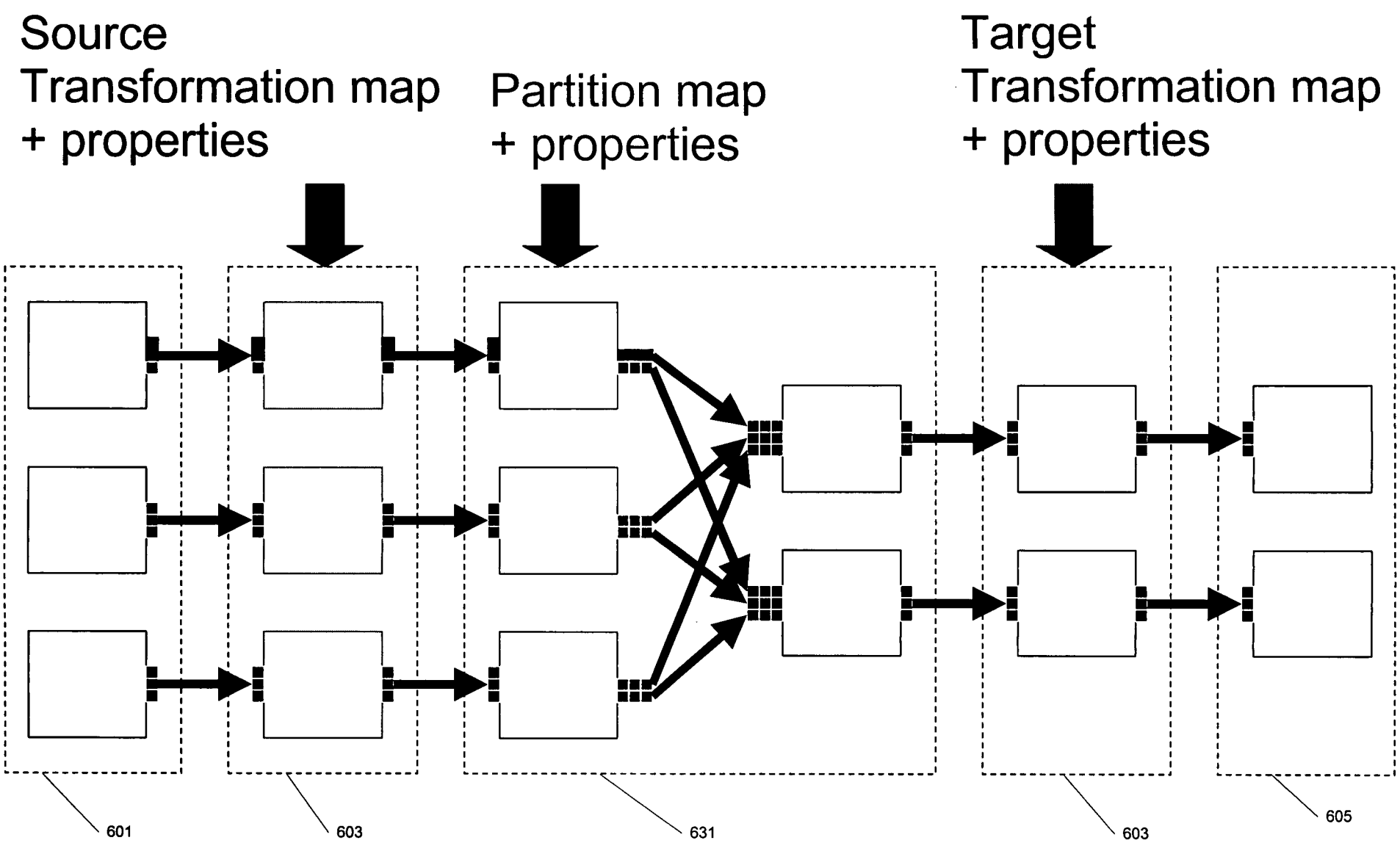
Fig. 26

Hyper Map Implements Partitioned Join



Hyper Partition is a Map Template

Fig. 27



Hyper Partition corrects Partition Schema Mismatch

Fig. 28

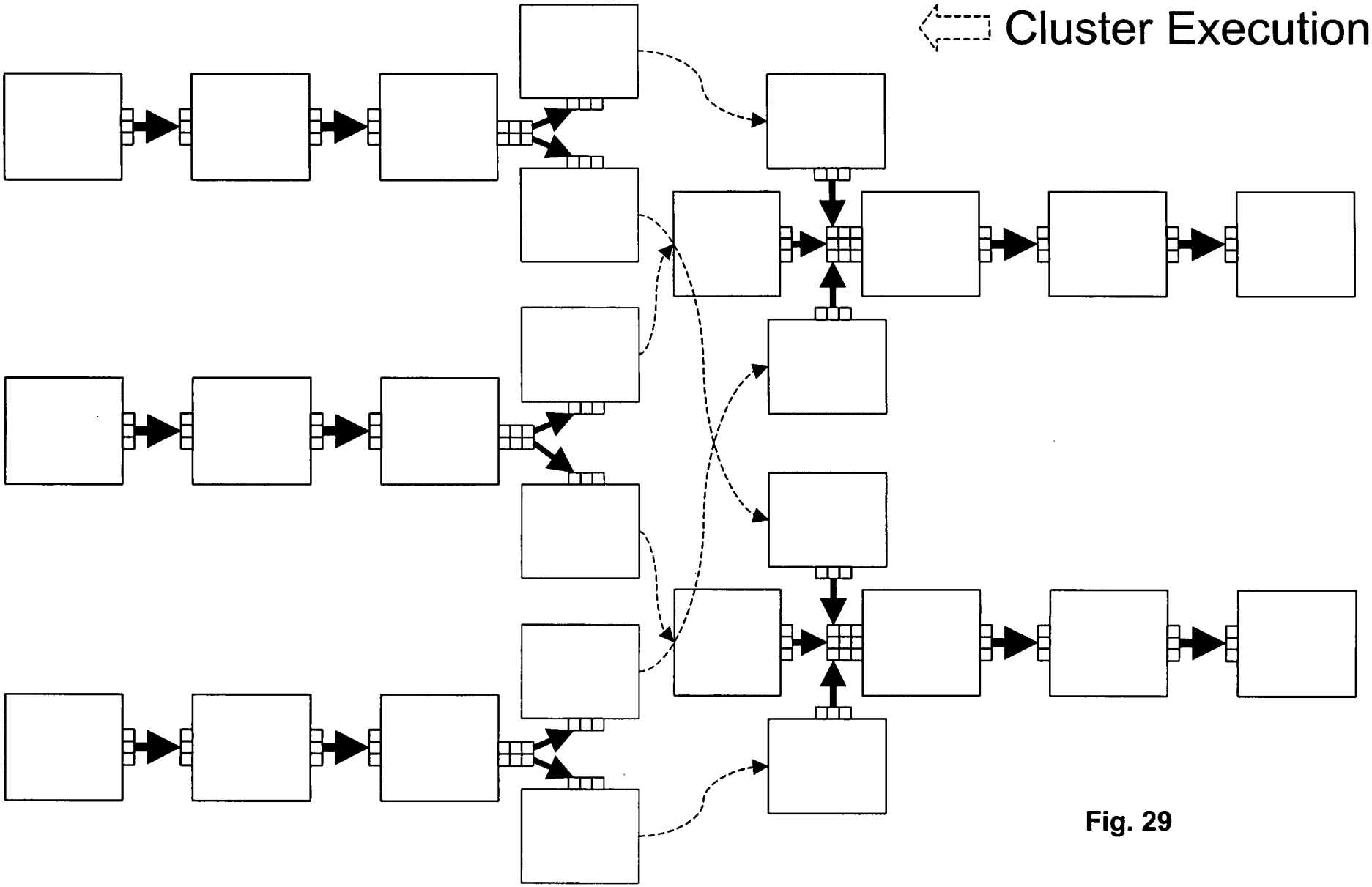


Fig. 29

Cluster Execution of Hyper Partition Pattern

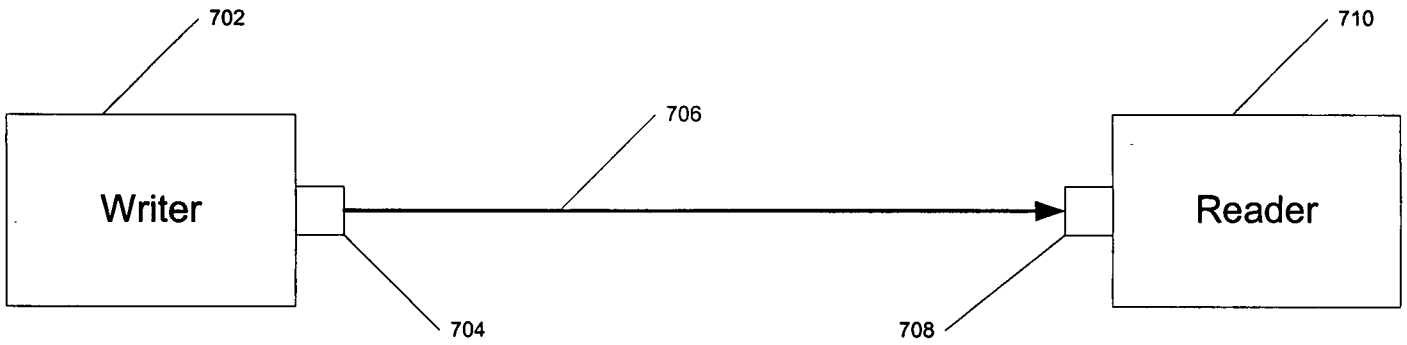


Fig. 30